UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,446	09/29/2000	Zohar Sivan	6727/1H144-US1	4421

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

		Application No.	Applicant(s)
Office Action Summary		09/677,446	SIVAN ET AL.
		Examiner	Art Unit	
		Ryan F. Pitaro	2174	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1)☒ Responsive to communication(s) filed on <u>14 February 2007</u>.
- 2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
- 3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4)☒ Claim(s) <u>1-28</u> is/are pending in the application.
    - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5)☐ Claim(s) _____ is/are allowed.
- 6)☒ Claim(s) <u>1-28</u> is/are rejected.
- 7)☐ Claim(s) _____ is/are objected to.
- 8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9)☐ The specification is objected to by the Examiner.
- 10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a)☐ All   b)☐ Some * c)☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    - * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1)☒ Notice of References Cited (PTO-892)
- 2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
- 4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
- 5)☐ Notice of Informal Patent Application
- 6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to Amendment filed 2/14/2007.

2.   Claims 1-28 are pending in this application. Claims 1, 12, 23 and 25 are

independent claims.   This action is made non-final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 1-4,8-15,19-23,28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Edgar et al ("Edgar", US 5,537,530) in view of Liou et al ("Liou", US

6,278,446).

As per independent claim 1, Edgar teaches a computer-implemented method for

organizing a sequence of video frames, comprising selecting one of the frames in the

sequence as an initial frame in a first portion of a segment of the sequence (Edgar, col.

4, lines 43-49); adding further frames in the sequence, subsequent the initial frame, to

the first portion, while a measure of similarity of each of the added frames to the frames

already in the first portion is within a first predefined bound (Edgar, col. 4, lines 57-61);

selecting one of the added frames in the first portion to be a representative frame for the

segment (Edgar, col. 4, lines 57-61); and generating a second portion of the segment by

adding automatically, under control of computer program instructions and without

intervention by a user (col.3, lines 34-38; col.7, lines 59-63), still further frames in the

sequence, subsequent to the last frame in the first portion, to the second portion,

(Edgar, col. 4, lines 57-61; col. 7, lines 56 – Column 8 line 1, likelihood value for scene

boundary is measured in terms of an image similarity metric or coordinates of the

images in a parameter space); and determining the first and second portions together to

constitute the segment that is represented by the representative frame (Edgar, col. 5,

lines 1-5). Edgar fails to distinctly point out determining a similarity between the r-frame

and other frames. However, Liou teaches a method for determining that the measure of

similarity of each added frame to the representative frame is within a predefined bound

(Figure 11). Therefore it would have been obvious to an artisan at the time of the

invention to combine the teaching of Liou with the method of Edgar. Motivation to do so

would have been to provide a way to organize a video to combine all of the frames that

belong together into one clip.

        As per claim 2, which is dependent on claim 1, Edgar-Liou teaches a method

according to claim 1, wherein selecting the frame as the initial frame comprises

selecting the first frame subsequent to a final frame in a preceding segment (Edgar,

col.5, lines 39-43).

As per claim 3, which is dependent on claim 1, Edgar-Liou teaches a method

according to claim 1, wherein adding the further frames comprises, for each of the

added frames, computing at least one parameter indicative of a characteristic of the

added frame, and wherein the measure of similarity comprises a distance measured

between the parameters of the added frame and the frames already in the first portion

(Edgar, col.8, lines 12-16).

As per claim 4, which is dependent on claim 3, Edgar-Liou teaches a method

according to claim 3, wherein computing the at least one parameter comprises

computing a vector of parameters, and wherein the distance comprises a vector

distance (Edgar, col. 8, lines 12-16).

As per claim 8, which is dependent on claim 1, Edgar-Liou teaches a method

according to claim 1, wherein selecting the representative frame comprises selecting a

final one of the frames added to the first portion to be the representative frame (Edgar,

col. 4, lines 57-61).

As per claim 9, which is dependent on claim 8, Edgar-Liou teaches a method

according to claim 8, wherein the frame in the sequence following the representative frame is outside the first predefined bound of the frames in the first portion (Edgar, col. 5, lines 1-5).

As per claim 10, which is dependent on claim 1, Edgar-Liou teaches a method according to claim 1, and comprising storing the sequence in an archive, and indexing the archive using the representative frame (Edgar, col. 5, lines 6-13).

As per claim 11, which is dependent on claim 1, Edgar-Liou fails to teach a method according to claim 1, and comprising compressing the sequence using the representative frame. However, OFFICIAL NOTICE is given that compressing video data and using a representative frame, or thumbnail, is well known in the art. It would have been obvious to one skilled in the art at the time of invention to include the ability to compress the video data in the invention of Edgar-Liou because it would reduce the amount of space needed to provide for the program, therefore making it more efficient.

Independent claims 12 and 23 are similar in scope to claim 1, and are therefore rejected under similar rationale.

Dependent claim 13 is similar in scope to claim 2, and is therefore rejected under similar rationale.

Dependent claim 14 is similar in scope to claim 3, and is therefore rejected under similar rationale.

Dependent claim 15 is similar in scope to claim 4, and is therefore rejected under similar rationale.

Dependent claim 19 is similar in scope to claim 8, and is therefore rejected under similar rationale.

Dependent claim 20 is similar in scope to claim 9, and is therefore rejected under similar rationale.

Dependent claim 21 is similar in scope to claim 10, and is therefore rejected under similar rationale.

Dependent claim 22 is similar in scope to claim 11, and is therefore rejected under similar rationale.

Claim 28 is similar in scope to that of claim 9 and is therefore rejected under similar rationale.

Claims 5-7,16-18,24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edgar et al ("Edgar", US 5,537,530) in view of Liou et al ("Liou", US 6,278,446) in view of Wilf et al ("Wilf", US 7,184,100).

As per claim 5, which is dependent on claim 3, Edgar-Liou teaches adding the further frames to the first portion while the distance between each of the added frames and the frames in the representative set is within the predefined bound (Edgar, col. 4,

lines 57-61; col. 8, lines 12-16). But fails to teach using a bounding subset to do this. However, Wilf teaches using a bounding subset of the frames in the first portion (Column 3 lines 20-34).Therefore it would have been obvious to an artisan at the time of the invention to combine the teaching of Wilf with the teaching of Edgar-Liou. Motivation to do so would have been to provide a combined set of key-frames.

As per claim 6, which is dependent on claim 5, Edgar-Liou-Wilf further teaches a method according to claim 5, wherein finding the bounding subset comprises selecting the subset so as to maximize a sum of the distances between all of the frames in the subset (Edgar, col.8, lines 55-62; Table 2; col.9, lines 50-55, Wilf, Column 7 lines 30-35).

As per claim 7, which is dependent on claim 6, Edgar-Liou-Wilf further teaches a method according to claim 6, wherein selecting the subset comprises determining the sum of the distances between one of the further frames added to the sequence and the frames in the bounding subset, and replacing one of the frames in the subset with the one of the further frames if replacing the one of the frames in the subset will increase the sum of the distances between all of the frames in the subset (Edgar, col. 9, lines 56-67; col.10, lines 50-67).

Dependent claim 16 is similar in scope to claim 5, and is therefore rejected under similar rationale.

Dependent claim 17 is similar in scope to claim 6, and is therefore rejected under similar rationale.

Dependent claim 18 is similar in scope to claim 7, and is therefore rejected under similar rationale.

As per claim 24, which is dependent on claim 5, Edgar-Liou-Wilf teaches a subset comprising of at least three frames (Wilf, Column 3 lines 22-34).

Claim 25 is similar in scope to that of claim 5 and is therefore rejected under similar rationale.

Claim 26 is similar in scope to that of claim 6 and is therefore rejected under similar rationale.

Claim 27 is similar in scope to that of claim 18 and is therefore rejected under similar rationale.

Response to Arguments

Applicants argue that Liou fails to teach any measure of similarity between his representative frame and other frames. Liou simply teaches determining that the measure of similarity of each added frame to the representative frame is within a

predefined bound. Liou is only meant to teach the method of comparing and

determining shots to determine if it is within a certain threshold. The actual adding and

subsequent frames to the representative frame portion is taught by Edgar, as applied

above.

Applicant's other arguments with respect to claims 1-28 have been considered

but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ryan F. Pitaro whose telephone number is 571-272-

4071. The examiner can normally be reached on 7:00am - 4:30pm M-Th, and

alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kristine Kincaid can be reached on 571-272-4063. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ryan Pitaro
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